

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: AGRI 323		Number of Credits: 3 Course credit policy (105)													
Course Full Title: Fruit Crop Production: Science and Practice Course Short Title: Fruit Crop Production															
Faculty: Faculty of Science		Department (or program if no department): Agriculture Technology													
Calendar Description: Both commercial production and traditional production practices by Indigenous peoples (pre-contact and contemporary) of fruit crops will be explored. Topics include biology of the crop groups, site selection factors, field preparation, variety selection, cultivation practices, post harvest physiology, storage, and marketing. The current use of robotics, automation, and data science will be examined for the production of commodities. Note: Field trips outside of class time will be required. Please check with the department for details.															
Prerequisites (or NONE):		None.													
Corequisites (if applicable, or NONE):															
Pre/corequisites (if applicable, or NONE):		AGRI 124.													
Antirequisite Courses (<i>Cannot be taken for additional credit.</i>) Former course code/number: AGRI 223 Cross-listed with: Equivalent course(s): <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>		Course Details Special Topics course: No <i>(If yes, the course will be offered under different letter designations representing different topics.)</i> Directed Study course: No <i>(See policy 207 for more information.)</i> Grading System: Letter grades Delivery Mode: Face-to-face only Expected frequency: Fall only Maximum enrolment (for information only): 25													
Typical Structure of Instructional Hours <table border="1"> <tr> <td>Lecture/seminar</td> <td>25</td> </tr> <tr> <td>Supervised laboratory hours (science lab)</td> <td>10</td> </tr> <tr> <td>Experiential (field trip)</td> <td>10</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>Total hours</td> <td>45</td> </tr> </table>		Lecture/seminar	25	Supervised laboratory hours (science lab)	10	Experiential (field trip)	10					Total hours	45	Prior Learning Assessment and Recognition (PLAR) PLAR is available for this course. Examination; writing of scientific paper on fruit crops.	
Lecture/seminar	25														
Supervised laboratory hours (science lab)	10														
Experiential (field trip)	10														
Total hours	45														
Scheduled Laboratory Hours Labs to be scheduled independent of lecture hours: <input type="checkbox"/> No <input type="checkbox"/> Yes		Transfer Credit (See bctransferguide.ca .) Transfer credit already exists: Yes Submit outline for (re)articulation: Yes <i>(If yes, fill in transfer credit form.)</i>													
Department approval		Date of meeting: June 2022													
Faculty Council approval		Date of meeting: September 9, 2022													
Undergraduate Education Committee (UEC) approval		Date of meeting: April 21, 2023													

Learning Outcomes *(These should contribute to students' ability to meet program outcomes and thus Institutional Learning Outcomes.)*

Upon successful completion of this course, students will be able to:

1. Describe the commercial fruit industry in BC in terms of current production and future opportunities.
2. Describe Indigenous cultivation practices in the Fraser Valley, pre-contact and contemporary.
3. Explain the underlying science (morphology, physiology, and post-harvest handling) in order to develop an evidence-based approach to sustainable commercial production of specific crops.
4. List the requirements for selecting a suitable site for various fruit crops including ecosystem impacts and services of site characteristics.
5. Perform soil and other tests (e.g., chlorophyll content) to determine improvements for optimum plant growth.
6. Differentiate the pros and cons of various varieties, including older heritage varieties and newer varieties.
6. Describe current methods used in fruit breeding including traditional breeding and various genetic approaches (transgenics, gene editing).
7. Identify both abiotic and biotic causes of crop stress and yield loss.
8. Conduct a group research project including question development, literature review, experimental design, data collection, data summary, interpretation, and presentation.
9. Determine appropriate timing (yield estimation) and techniques for harvest of fruit crops in British Columbia.
10. Identify the use of automation, robotics, and data science in fruit production as tools for addressing labour, sustainability, and other production issues.
11. Identify different types of pollination management approaches for fruit production.

Recommended Evaluation Methods and Weighting *(Evaluation should align to learning outcomes.)*

Assignments	25%	Quizzes/tests:	30%	Final exam:	20%
Project:	25%		%		%

Details:

Weekly quizzes are done pre-class to ensure that students have completed the pre-class readings. Assignments consist of weekly to bi-weekly worksheets that assess students learning usually with hands-on activities dispersed through the lecture. A series of smaller assignments are scaffolded into a larger research project.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Texts and Resource Materials *(Include online resources and Indigenous knowledge sources. [Open Educational Resources](#) (OER) should be included whenever possible. If more space is required, use the [Supplemental Texts and Resource Materials form](#).)*

Type	Author or description	Title and publication/access details	Year
1. Other	Reimer, Chad	Before we lost the lake: A natural and human history of Sumas Valley	2019
2. Online resource	Ministry of Agriculture BC	BC Berry Production Guide	
3.			
4.			
5.			

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Course Content and Topics

- What is a fruit?
- Fruit production by Sto:lo peoples in the Fraser Valley: berry patches/forest gardens and survey of locally important fruit crops
- Field trip to Willems Berry Farm (Abbotsford BC)
- Taxonomy, morphology, physiology, life history
- Biotic resources: plants – variety selection and breeding
- Abiotic resources; nutrients, water, light, temperature – site selection
- Nutrient and pest management
- Production – harvest and dormancy (Van Maren Hazelnut Farm – Harvest Option 1)
- Production – maintenance/pre-production (Tri R Cranberries – Harvest Option 2)
- Production – propagations
- Post-harvest fruit quality
- Research project – final data collection and poster layout
- Industry trends and issues (including automation trade, labour, competition, sustainability)
- Fruit production research day – poster presentations